

Report of the
Precautionary Principle Task Force
Incorporating the Precautionary Principle
into State Government

October 12, 2006



Recommendations to:



Secretary Ron Curry
NM Environment Department

Secretary Michelle Lujan Grisham
NM Department of Health



Report of the
PRECAUTIONARY PRINCIPLE TASK FORCE

**Implementing the Precautionary Principle
Into State Government**

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October 12, 2006

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Executive Summary

The Precautionary Principle is an approach to risk management that has been developed for use in circumstances of scientific uncertainty, reflecting the need to take prudent action when there is evidence of potential risk, even if some cause-and-effect relationships are not fully established scientifically. This principle finds that a lack of information does not justify the absence of management measures. On the contrary, management measures should be implemented in order to maintain the conservation of the resources. The goal of risk management is to take scientifically sound, cost-effective integrated actions that reduce risks while taking into account social, cultural, ethical, and legal considerations.

The Precautionary Principle Task Force, created by a Memorandum of Understanding between the New Mexico Department of Health and the New Mexico Environment Department, is charged with advising executive branch departments on the potential and practice of implementing the Precautionary Principle into state government, and, through example, into local governments, public schools and institutions of higher education.

Recognizing the risks to human health and the environment, the Task Force modified the United Nations definition from the 1992 Rio Conference as its working definition for New Mexico:

“In order to protect human health and the environment, the precautionary approach shall be widely applied by New Mexico State Government according to its capabilities. Where there are threats of serious or irreversible damage, the lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent deterioration of human health or environmental degradation.”

To carry out their mission, the Task Force formed four working groups that included representative stakeholders. The work group’s recommendations, as adopted by the

Task Force, are contained in this report and comprise four separate sections that represent the overall goals and focus of this effort. The sections are: 1) Indoor Air Quality/Tobacco; 2) Good Health Strategies; 3) Construction and Renovation; and, 4) Integrated Pest Management. Task Force recommendations support taking action to promote health in situations where there is scientific consensus, as well as in situations where there is scientific uncertainty. Recommendations generated by more than one work group are included in the respective sections for reference purposes.

Indoor Air Quality/Tobacco

A large range of human activities related to the use and maintenance of buildings affects Indoor Air Quality (IAQ). Policy makers have prohibited many previously acceptable activities, such as employees smoking indoors. Other areas of concern are not as readily apparent but in need of action nonetheless. This includes airborne emissions and residue from materials used in the following: building construction and renovation, furniture and carpet manufacturing processes, cleaning product solutions, pesticide applications, and chemical air fresheners. Of equal importance to good indoor air quality is proper preventive maintenance of the building's heating, ventilation and air conditioning system, which ensures good air filtration and inhibits mold growth.

The Task Force recommends:

- Banning outdoor smoking of tobacco on state owned properties (with exceptions for designating smoking areas on certain properties)
- Non-renewal of recently expired state purchasing contracts for tobacco products
- Providing nicotine gum, patches and nose sprays to employees at no cost
- Discontinuing the use of fragrance-emitting devices
- Turning off vendors' vehicle engines when making a stop at an occupied building
- Requiring proper functioning and maintenance of HVAC systems in office space leased by the state

- Encouraging conformance of state buildings with the State's Green Cleaning Plan
- Using low-emitting products and materials in state occupied buildings
- Delineating a procedure addressing employee use of personal fragrance products, when needed, to accommodate staff or the public.

Good Health Strategies

While indoor air quality is a key component for good health, the Task Force recognized that practices related to the consumption of nutritious food and drinks, the encouragement of physical activity to keep the body in sound operating condition, and the reduction of mental stress were of complementing importance in achieving a productive workforce.

The Task Force recommends:

- Discontinuing the use of trans fat/hydrogenated oils in the frying of food in state food establishments
- Offering healthy alternatives in vending machines
- Providing at least one certified organic menu option in state operated food establishments
- Encouraging state funded institutional food programs to include an organic food offering
- Including an employee exercise motivation component as part of the State's Medical Plans, and negotiate contracts for discounted employee rates at area fitness centers
- Initiating a State Health Center Pilot Program
- Implementing a stress reduction program modeled on the Department of Public Safety's Police Peer/Police Officer Support Team Program (POST) and Partners for Police Officers Program (PPO).

Construction and Renovation

The state of New Mexico instituted a best practice for state building construction when Governor Bill Richardson signed Executive Order 2006-001, *State of New Mexico Energy Efficient Green Building Standards for State Buildings*. Through EO-06-001, the Governor ordered that all new construction and major renovations of buildings over 15,000 square feet achieve, at a minimum, a Silver rating in accordance with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Rating System. The executive order and the LEED rating system, both of which are endorsed by the Task Force, have served the Construction and Renovation Work Group as a foundation for many of the recommendations adopted by the Task Force.

The Task Force recommends:

- Emphasizing indoor air quality and daylighting credits when obtaining a LEED rating
- Using low-emitting products and materials in state occupied buildings
- Requiring preventive ventilation maintenance measures in office space leased by the state
- Preferentially purchasing electrical equipment that emit lower electromagnetic fields (EMFs); informing workers of building spaces containing an elevated EMF source, and taking measures to reduce occupants' exposure to the field
- Employing the United States Environmental Protection Agency Tools for Schools Renovation and Repair Backgrounder and Checklist in building renovation and repair projects
- Minimizing carpet flooring and, where new carpets are installed, using low volatile organic compound-emitting carpet tiles
- Specifying operable windows in new building construction
- Ensuring that project design eliminates or minimizes pathways that would allow vehicle exhaust fumes to enter the building

Integrated Pest Management

Integrated Pest Management (IPM) is a sustainable approach to managing pests by combining biological, cultural, physical, mechanical and chemical tools in a way that minimizes economic, health, and environmental risks. As such, the underlying objective of the Task Force's pesticide application recommendations is using non-chemical strategies whenever possible, and in instances where state government must resort to chemical usage, to employ least toxic chemicals in the minimum amounts needed at the most advantageous time necessary to eliminate the pest. A primary component needed to achieve this objective is education and training.

The Task Force recommends:

- Establishing a single-point Integrated Pest Management Resource Center and designating a state IPM coordinator through collaborative efforts of the departments of agriculture, environment and health
- Requiring pest prevention protocol for approval of new building design and renovations
- Avoiding plantings in interior design and exterior landscaping that have low pest and disease resistance or provoke allergies
- Developing and implementing a notification process for herbicide/pesticide applications
- Investigating methods for the expansion of the Department of Transportation Integrated Vegetation Management Program
- Requiring that only licensed individuals make pesticide applications on state property.
- Adopting the General Services Department Building Service Division's soon to be released Integrated Pest Management Plan
- Incorporating an Integrated Pest Management training module into the Environment Department's food service and food processor training

- The monitoring of pesticide advertising by the Consumer Affairs Division of the Office of the Attorney General and the elimination of false and misleading advertising regarding services and products.

Conclusion

The Precautionary Principle Task Force believes that the recommendations adopted within this report are pragmatic, beneficial and attainable. The Task Force recommends the development of a strategic plan for the implementation of these recommendations. The first step should include outreach to other state agencies to further inform and respectively evaluate the potential for implementation.

It is the hope of the Precautionary Principle Task Force that, through example, the Departments of Health and Environment will continue to serve as leaders for protecting human health and the environment. The Task Force applauds both Cabinet Secretaries for their collaborative effort to better state government.

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As children back in the 1950s, we would eagerly await the mosquito spraying trucks. Then, as they came rolling slowly down the street, we would run behind them, dancing and playing in the white fog of the pesticide spray.

*Norma Silva
Retired State Employee*

Introduction

The Precautionary Principle is an approach to risk management that has been developed for use in circumstances of scientific uncertainty, reflecting the need to take prudent action when there is evidence of potential risk, even if some cause-and-effect relationships are not fully established scientifically. This principle finds that a lack of information does not justify the absence of management measures. On the contrary, management measures should be implemented in order to maintain the conservation of the resources. The goal of risk management is to take scientifically sound, cost-effective integrated actions that reduce risks while taking into account social, cultural, ethical, and legal considerations.

Recognizing the risks to human health and the environment, the Task Force modified the United Nations definition from the 1992 Rio Conference as its working definition for New Mexico:

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certainty shall not be used as a reason for postponing cost-effective measures to prevent deterioration of human health or environmental degradation.”

Government policies and procedures that have evolved over the last fifty years as less-than-best practices from the past, coupled with newer and better scientific information, have led to heightened concerns about the public’s health and environment. In the 1950’s, evidence tying pesticide usage to chronic health effects in humans was almost non-existent. Conclusive scientific research findings related to the increased likelihood of cancer from tobacco use, the relationship between trans fats in food and their harmful effects on the cardiovascular system, and the human health impacts of mental stress, were also in their earliest stages and often discounted.

The lesson of the past is simple: What cannot be discerned may be causing harm.

Elected and administrative leaders of the new century will be faulted if they choose to ignore this lesson and fail to implement precautionary measures to protect human health and the environment. A policy of inaction, due to some scientific uncertainty in the face of evidence of harm, is no longer an acceptable option.

The Precautionary Principle Task Force, created by a Memorandum of Understanding between the New Mexico Department of Health and the New Mexico Environment Department, is charged with advising executive branch departments on the potential and practice of implementing the Precautionary Principle into state government, and, through example, into local governments, public schools and institutions of higher education.

As developed and designed for implementation in state government, the Precautionary Principle is a rule of conduct guiding processes and procedures where there is threat of harm to human health or the environment.

To carry out their mission, the Task Force formed four working groups that included representative stakeholders. The work group’s recommendations, as adopted by the

Task Force, are contained in this report and comprise four separate sections that represent the overall goals and focus of this effort. The sections are: 1) Indoor Air Quality/Tobacco; 2) Good Health Strategies; 3) Construction and Renovation; and, 4) Integrated Pest Management. Task Force recommendations support taking action to promote health in situations where there is scientific consensus, as well as in situations where there is scientific uncertainty. Recommendations generated by more than one work group are included in the respective sections for reference purposes.

Indoor Air Quality/Tobacco

A whole range of human activities related to building use and maintenance affects indoor Air Quality (IAQ). Policy makers have addressed many previously acceptable activities, such as employees smoking indoors. Other areas of concern are not as readily apparent but in need of action nonetheless. This includes reducing or eliminating airborne emissions and residue from materials used in the following: building construction and renovation, furniture and carpet manufacturing processes, cleaning product solutions, pesticide applications, and chemical air fresheners. Of equal importance to good indoor air quality is proper preventive maintenance of the building's heating, ventilation and air conditioning (HVAC) system, which ensures good air filtration and inhibits mold growth.

Individual susceptibility to the effects of air components varies from person to person. A high juniper pollen count that is unnoticeable by one office occupant can cause another to sneeze and have a runny nose, or, in the case of an asthmatic or person with multiple chemical sensitivities, trigger a debilitating attack that leaves the person struggling for each breath or tired and confused. The New Mexico Department of Health (DOH) estimates that in 2004 over 131,200 adults reported currently having asthma.¹ Asthma rates continue to rise over time. In 1997, the New Mexico Behavioral Risk Factor Survey found that 16 percent of the respondents considered themselves allergic or unusually sensitive to everyday chemicals.

With a foundation set by the information described above, the working group formulated recommendations that focus on minimizing procedures, processes and pathways through which air contaminants enter into state buildings. The recommendations, method of implementation, and a brief description of the rationale for those recommendations are detailed below.

¹ NM Department of Health. *Asthma Burden Report 2006*

Recommendation IAQ-1: Smoking tobacco shall be prohibited on state-owned properties and on private properties leased by the state. State trust lands, state parks, EXPO New Mexico, personal residences on state-owned or leased property, and leased property that is part of a larger complex containing space leased by non-state organizations are not included in this recommendation. However, Expo New Mexico and State Parks shall, respectively, adopt a smoking policy that includes designated smoking areas on the fairgrounds and within improved areas of a state park. State government operations within a political subdivision shall adhere to that subdivision's tobacco laws if they are more stringent than state requirements.

Implementation: Executive Directive and State Fair Commission.

Rationale: The basis for this recommendation is four-fold: 1) Smoking tobacco is detrimental to good health; 2) Secondhand smoke from people smoking outside a structure may enter the building through the ventilation system, open windows or doors; 3) State employees who smoke tobacco products drive up health care costs within the insurance pool, which translates into higher premiums for non-tobacco users; and, 4) There is a loss of productivity related to the extra margin of time taken by a smoker's break when compared to a non-smokers break. Each of these components is briefly discussed in the following paragraphs.

Smoking and Good Health – The 1964 Surgeon General's Report on the health effects of smoking documented evidence of the deleterious consequences to the human body from smoking tobacco. Forty years later, in 2004, the Surgeon General reported on the causality of smoking with disease.² In the 2004 report the Surgeon General identifies adverse health effects from smoking, which includes 10 different types of cancer, four

² U.S. Department of Health and Human Services, *The Health Consequences of Smoking: A Report of the Surgeon General*. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health 2004. (Uniform Resource Locator(URL):http://www.cdc.gov/tobacco/sgr/sgr_2004/index.htm)

cardiovascular diseases, five respiratory diseases (including respiratory effects identified *in utero*, childhood, adolescence, and adulthood), as well as four areas of reproductive effects related to the fetus, the infant, fertility and pregnancy complications.³

Secondhand Smoke: Secondhand smoke is composed of sidestream smoke (the smoke released from the burning end of a cigarette) and exhaled mainstream smoke (the smoke exhaled by the smoker). On June 27, 2006, the Surgeon General released a definitive report concluding that: 1) there is no risk-free level of second hand smoke; 2) nonsmokers exposed to secondhand smoke at home or work increase their risk of developing heart disease by 25 to 30 percent and lung cancer by 20 to 30 percent; and, 3) nearly half of all nonsmoking Americans are still regularly exposed to secondhand smoke.⁴ This recommendation would lower the risk of non-smoking individuals within state buildings inhaling secondhand smoke.

Insurance Premiums: According to the American Cancer Society:

- Smokers make about six more visits to health care facilities per year than nonsmokers. In a study of health care utilization in 20,831 employees of a single, large employer, smokers had more hospital admissions per 1,000 (124 vs. 76 admissions), a longer average length of stay (6.47 vs. 5.03 days), higher average costs for outpatient visits (\$122 vs. \$75), and a higher average insured payment for health care (\$1,145 vs. \$762).
- Average lifetime medical care costs for male smokers are 32 percent higher than for men who have never smoked. For female smokers, that cost is 24 percent.
- Estimated medical costs attributable to smoking in the US in 1993 were \$50 billion.⁵

In light of these increased smoker derived health costs, and as a tool to motivate workers to quit smoking, an increasing number of businesses are requiring employees

³ Ibid.

⁴ U.S. Department of Health and Human Services, *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health 2006. (URL <http://www.surgeongeneral.gov/library/secondhandsmoke/report/>)

⁵ *The Cost of Smoking to Business*. American Cancer Society, April 13, 2000 (URL http://www.cancer.org/docroot/NWS/content/NWS_2_1x_The_Cost_of_Smoking_to_Business.asp)

who use tobacco to pay higher insurance premiums. The Task Force considered and rejected this option as a recommendation in the belief that such a policy could prove to be the beginning of a slippery slope: The concern being that employees with other medical conditions may some day be identified for mandatory higher insurance premiums over their healthier colleagues.

Loss of Productivity: In November of 2005, every Presbyterian Healthcare Services (PHS) facility in New Mexico became tobacco-free. In addition to the strong message that smoking and using tobacco is inconsistent with good health, the PHS did a cost analysis to show the cost to an employer on productivity. Their estimate of lost productivity to PHS was approximately four million dollars a year.⁶ Further, according to the American Cancer Society, cigarette smokers are absent from work 6.5 days per year more than nonsmokers and approximately eight percent of smoker's working hours are spent on smoking rituals.⁷

Reasons for exempting certain state properties are:

1. State trusts lands are largely rural and dedicated to specific leaseholders, rather than the general public.
2. Unimproved areas within most state parks experience extremely low visitor density, and the large amount of open space would severely hinder effective enforcement practices. Improved areas (those with shelters, water, toilets and occasionally electricity) are within compact defined areas of higher density.
3. EXPO oversight is under the authority of the State Fair Commission and not within the executive branch. EXPO sees a tremendous number of public visitors each year, necessitating further study and stakeholder input collection prior to adopting a smoking ban.
4. Employees in some areas of the state are provided with state-owned residences (e.g., at Correction's facilities and in State Parks). It is not the intent of the Task

⁶ Angellis D., Chief Medical Officer/Vice President of Medical Affairs, Presbyterian Health Plan, email to M. Baca

⁷ *The Cost of Smoking to Business*, American Cancer Society

Force to promulgate a recommendation regarding personal tobacco use within or surrounding an individual's residence.

5. Often times the state leases office space in privately owned buildings. Though the requirement may be incorporated into the procurement process, building owners with multiple tenants could choose not to respond to bid advertisements, thus depriving the state of possibly needed space.

Recommendation IAQ-2: State purchase contracts for cigarettes and tobacco products shall not be renewed after their expiration date of August 24, 2006.

Implementation: Directive from the Secretaries of the Corrections Department and the Children, Youth and Families Department.

Rationale: State Purchasing Division contract numbers 61-00021 and 60-00021 for cigarette and tobacco products from Republic Tobacco, Glenview, Illinois deviates from the Task Force's intent to make state government smoke-free. The two departments recorded as having used the contracts are the Corrections Department and the Children, Youth and Families Department. Both departments now operate smoke free institutions, negating the need for these contracts.

Recommendation IAQ-3: Nicotine gum, patches and nose sprays shall be covered by state health insurance providers and made available to state employees at no cost to the employee.

Implementation: General Services Department Risk Management Division and the Department of Health.

Rationale: Though the initial choice to use tobacco products is within the user's discretion, the choice to stop using the product comes with a price as the user finds their behavior largely controlled by a psychoactive substance and that he or she is

addicted. In 1988, the Surgeon General reported that nicotine is the drug in tobacco that causes addiction, and that such addiction is similar to addiction to drugs such as heroin and cocaine. Further, in the same report, the Surgeon General described nicotine effects on the human body. This description is excerpted below.

Nicotine is a powerful pharmacologic agent that acts in a variety of ways at different sites in the body. After reaching the blood stream, nicotine enters the brain, interacts with specific receptors in the brain tissue, and initiates metabolic and electrical activity in the brain. In addition, nicotine causes skeletal muscle relaxation and has cardiovascular and endocrine (i.e. hormonal) effects.⁸

In addition, several other studies have provided findings on the cost effectiveness and cessation efficacy related to low-or-no-cost strategies of tobacco nicotine replacement services.

The focus of these studies is two-fold: The monetary gains realized by health insurance providers when policy coverage includes nicotine replacement therapies, and the higher success rates in battling the addictive influences of nicotine when nicotine gum or patches are provided at no cost.

Cost analysis from the Center for Health Studies, Group Health Cooperative of Puget Sound, as published in the New England Journal of Medicine,⁹ found that with full coverage, an estimated 2.8 percent of smokers stopped smoking per year as compared with 1.3 percent with standard coverage. The financial gain occurs from the avoidance of tobacco caused health conditions such as hypertension and heart disease.

⁸ U.S. Department of Health and Human Services. *The Health Consequences of Smoking: Nicotine Addiction: A Report of the Surgeon General*. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health 1988. (URL http://www.cdc.gov/tobacco/sgr/sgr_1988/index.htm)

⁹ Curry S., Grothaus LC., McAfee T., Pabiniak C. *Use and Cost Effectiveness of Smoking-Cessation Services under Four Insurance Plans in a Health Maintenance Organization*. N Engl J of Med 1998; 339:673-679

Providing free gum as part of smoking cessation program was the focus of a study published by the Journal of Family Practice.¹⁰ According to the study, the 1-year lapse-free abstinence success rates of 375 participants in a smoking-cessation program revealed that participants who were provided nicotine gum by their employer had a significantly higher 1-year success rate (38% vs. 27%) than those who purchased the gum individually. It should be noted that the participants were in a smoking cessation program led by family physicians. Distribution of free nicotine patches was the subject of a 1996 study published by the Journal of the American Medical Association.¹¹ The findings from the study provide support both for the routine use of the nicotine patch as an adjunct to physicians' smoking cessation counseling and for health insurance coverage of nicotine patch therapy.

Recommendation IAQ-4: Discontinue the use of fragrance-emitting devices, plug-ins or sprays, urinal or toilet blocks, or other deodorizer/re-odorizer products in state-owned and leased buildings. Personal residences on state-owned or leased property are exempt from this recommendation.

Implementation: Executive Directive and State Fair Commission.

Rationale: The presence of scented products contributes to poor indoor air quality and can cause adverse physical effects, especially in people suffering from asthma or multiple chemical sensitivities. Many chemicals found in fragrance-emitting devices, as well as in cleaning solutions, are volatile organic compounds associated with harmful human health effects, including cancer, damage to internal organs and abnormal fetal development. Toxicity effects are often a function of the cumulative exposure an individual has with a hazardous chemical. The state of California requires warning labels on products found to be a hazardous. Figure 1 is a product label clipped from a

¹⁰ Cox JL., McKenna JP. [Nicotine gum: does providing it free in a smoking cessation program alter success rates?](#) J Fam Pract 1990;31(3):278-80

¹¹Fiscella K., Franks P. *Cost-effectiveness of the transdermal nicotine patch as an adjunct to physicians' smoking cessation counseling.* JAMA 1996;275:1247-1251.[\[Abstract\]](#)

box of urinal deodorizers that are used in the lavatories in the office building of the author of this report. The carcinogenic warning is in the print at the bottom.



Figure 1

Rather than masking odors, the goal within the workplace and public buildings should be removal of the cause of the odor, venting offending areas directly outdoors, and/or diluting indoor air by opening windows or increasing outdoor air volume intake in HVAC systems.

Recommendation IAQ-5: Vendors supplying or making deliveries as a part of state government purchasing or operations shall turn off their vehicle's engines when stopping at an occupied building.

Implementation: Executive Directive.

Rationale: The increase in asthma since 1980 is well documented, and the disease has been identified as one of the nation's most chronic diseases.¹² At least one study has identified the polycyclic aromatic hydrocarbon (PAH) core of diesel exhaust particles

¹² US Department of Health and Human Services, National Institute of Health, National Heart, Lung, and Blood Institute. *Data Fact Sheet, Asthma Statistics*. 1999

(DEP) as the main attribute in traffic pollution triggers. PAH causes T-cell activation (the main cells orchestrating asthma inflammation) in severe asthmatics.¹³

The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 62 recommends that outside air be brought into the workplace at a rate of 20 cubic feet per person every minute, which is most commonly met through a roof top heating/cooling unit. During the course of normal state operations, deliveries of food and supplies from a variety of vendors are made on a regular basis. In some instances diesel trucks remain idling while the delivery is made. Because the height of the exhaust pipe on the truck is sometimes at or near roof level, with the potential for exhaust fumes being sucked into the air handling system, it is recommended that all delivery vehicles shut off their engines. This direction may be given either through the posting of signs or a written notice from the state to the vendors. Shown below in Figure 2 (courtesy of the New Mexico Indoor Air Quality Tools for Schools Program) is a picture showing the proximity of a vehicle's exhaust pipe to a "fresh air" intake.



Figure 2

¹³ Mamessier E., Nieves A., Vervloet D., Magnan A. *Diesel exhaust particles enhance T-cell activation in severe asthmatics*. European Journal of Allergy and Clinical Immunology. Volume 61 Issue 5. May 2006. [Abstract] (URL <http://www.blackwell-synergy.com/doi/abs/10.1111/j.1398-9995.2006.01056.x>)

Recommendation IAQ-6: The owners of private office space leased by the state shall certify that they have performed the heating, ventilation, and air conditioning maintenance as specified by Building Services Division minimum requirements (Duplicate of Recommendation CR-20).

Implementation: General Services Department Property Control Division, State Land Office and Department of Transportation lease language.

Rationale: Agency managers (Bureau Chiefs, District Managers or Field Office Managers) located within leased office space are currently responsible for ensuring adequate maintenance to the heating, ventilation and air conditioning system. Proper maintenance (e.g., changing furnace filter, replacing evaporative cooling pads, or proper outdoor air intake damper operation) is critical in ensuring good indoor air conditions. This recommendation will place the responsibility on the building owner and ensure that maintenance procedures are to the same standard as required by the Building Services Division in State owned buildings. Additionally, the state's managers will no longer have a job responsibility that is peripheral to the mission of their offices.

Recommendation IAQ-7: Encourage all state-owned buildings to conform to the General Services Department Building Services Division Green Cleaning Plan. As part of the State Purchasing Request for Proposal process, private property leased by the state shall include points for conformance with the program. The General Services Department Building Services Division shall develop Uniform Custodial Processes and Procedures related to cleaning products used in state properties and private properties leased by the state.

Implementation: Executive Directive and General Services Department Building Services Division.

Rationale: The GSD Building Services Division Green Cleaning Plan is a best practice wherein the department has been active in establishing precautionary measures. By implementing the Plan, building occupants, and maintenance and custodial personnel will have reduced exposure to potentially hazardous contaminants. Such contaminants have a variety of adverse impacts to air quality, human health, building finishes, building systems, and the environment. The Building Services Division has also issued a Request for Proposal (March 10, 2006) aimed at procuring environmentally preferable custodial products. At the present time they are in the process of evaluating the products to determine if they comply with the environmental requirements. They received proposals for 80 products in 10 categories.

Regular cleaning of indoor office spaces and lavatories provides an aesthetically pleasing and sanitary working place. However, recent research related to cleaning products and their attendant emissions (both primary and secondary) provide ample reason for limiting exposure to certain products when used repeatedly or which contain air freshening components. This especially holds true in areas with minimal ventilation. Researchers at the University of California-Berkeley and Lawrence Berkeley National Laboratories concluded in a four-year study that cleaning agents can yield high levels of volatile organic compounds, including glycol ethers and terpenes that can react with ozone to form a variety of secondary pollutants including formaldehyde and ultrafine particles.¹⁴ Recommendations in the study mirror several aspects of the Green Cleaning Plan, including screening of product cleaning ingredients and proper dilution of cleaning solutions. The Plan will also reduce the environmental impacts of refuse from cleaning products, disposable janitorial paper products and trash bags.

Adoption of this recommendation will expand the Plan's goals and objectives to leased office space used by the state, which at the present time is not under the purview of the Building Services Division.

¹⁴ Singer, BC., Destailats, H., Hodgson, AT., Nazaroff WW., *Cleaning products and air fresheners: emissions and resulting concentrations of glycol ethers and terpenoid*. Indoor Air 2006; 16:179-191

In order to achieve employee awareness and consistency of application of less caustic or hazardous materials, uniform procedures should be developed for all building custodians.

Recommendation IAQ-8: Interior building materials used in new construction or renovations of habitable space shall comply with The Collaborative for High Performance Schools, Section 01350, Special Environmental Requirements. (Duplicate of Recommendation CR-19.)

Implementation: Executive Directive

Rationale: Exposure to indoor air pollutants has increased due to several factors, including the use of synthetic building materials and furnishings. The California Collaborative for High Performance Schools (CHPS, pronounced chips) has adopted the above referenced Section 01350. The collaborative includes the California Department of Health Services and the California Air Resources Board and private companies. Section 01350 provides selection guidelines and emission-testing protocols that identify materials with low chemical-emitting properties. Included in the standard is a listing of low-emitting materials meeting the above referenced protocols. According to the Healthy Building Network, the Section 01350 Standard has three key components related to materials screening for indoor air quality.¹⁵ They are:

1. Screening based upon emission testing for exposure: Products are tested by an independent laboratory in assembly (e.g., floor tile glued to a concrete pad) for 96 hours after ten days of conditioning. The emission levels for 80 chemicals on the California Office of Environmental Health Hazard Assessment (OEHHA) Chronic Reference Exposure Limit List (CREL) are determined and gauged against maximum established concentration level ceilings. The emission rate is

¹⁵ Lent T. *Improving Indoor Air Quality with the California 01350 Specification*, 2006. (URL http://www.healthybuilding.net/healthcare/CHPS_1350_summary.pdf)

then used in a model incorporating data from the planned building. This data includes the amount of product, volume of the building and its weekly air change rate. In order to meet the standard, the modeled concentration level of any of the 80 chemicals, except formaldehyde, must not exceed half of the CREL value. Formaldehyde has a recommended air limit based on the As Low As Reasonably Achievable Principle, or 33 micrograms per cubic meter.

2. Construction Adhesives Component Screening: No component listed as a carcinogen or reproductive toxicant by the California Safe Drinking Water and Toxic Enforcement Act of 1986 or the California Air Resources Board list of Toxic Air Contaminants can constitute 1% of the mass of the adhesive by weight.
3. Reporting on Compounds Measured: The contractor must also report: 1) The ten most abundant compounds emitted; 2) All compounds in the material that are on the CREL; and, 3) All compounds in the material described in the Construction Adhesives Component Screening.

CHPS lists the products that have been certified by its manufacturer and an independent laboratory to meet the CHPS Low-Emitting Materials criteria for use in a typical classroom, based on the process described above. This list is available at:

http://www.chps.net/manual/lem_table.htm

Recommendation IAQ-9: The State Personnel Board shall develop a model policy delineating a procedure for use by supervisors in addressing issues related to employee personal product application that adversely effect other employees in the workplace.

Implementation: State Personnel Board and State Personnel Office.

Rationale: There are occasions when an employee's use of fragrant products (e.g., aftershaves, perfumes and deodorants) may trigger a physical reaction in fellow employees. An individual fragrance formula may contain over 100 chemicals, but their

identity is protected as a trade secret. Fragrances do not have to be tested for safety before they are put on the market.¹⁶ This is a highly personal issue necessitating specific supervisory training so as to successfully address the problem without impacting work place interactions. It is suggested that the State Personnel Office review the Maine Department of Labor *Policy on Chemicals and Fragrances in the Workplace* for guidance on this recommendation.

¹⁶ [Bridges, B, Fragrance: emerging health and environmental concerns, Flavour and Fragrance Journal](http://www3.interscience.wiley.com/cgi-bin/fulltext/93514043/PDFSTART) 2002; 17: 361-371 (URL <http://www3.interscience.wiley.com/cgi-bin/fulltext/93514043/PDFSTART>)

Good Health Strategies

While indoor air quality is a key component for good health, the Task Force recognizes that practices related to the consumption of nutritious food and drinks, the encouragement of physical activity to keep the body in sound operating condition, and the reduction of mental stress are of complementing importance in achieving a productive workforce. As such, a working group addressing these specific areas was formed. The following are the recommendations of the working group as adopted by the Task Force.

Recommendation GHS-10: Trans Fat/Hydrogenated oils manufactured for the frying of food shall not be purchased through the state contracting process, nor shall they be used in state-operated food establishments.

Implementation: Executive Directive

Rationale: Saturated fat, trans fat, and cholesterol in the diet all raise the level of "bad" cholesterol in the blood (low-density lipoprotein or LDL). The higher the LDL cholesterol, the greater the risk for coronary heart disease (CHD), the main form of heart disease and a leading cause of death, illness, and disability in the United States.¹⁷ Saturated fat and cholesterol are found in animal products such as fatty pieces of meat, organ meat and full fat dairy products. Trans fats, while also found naturally in some cuts of meat, are typically a manufactured product whose constituent fats have been chemically altered by the addition of hydrogen atoms; hence the name hydrogenated oils. Nutrition Facts Panels seen on food packages were instituted by Food and Drug Administration (FDA) Regulation in 1993. At the time, trans fats were not listed because of inconclusive evidence linking them to higher blood cholesterol levels.¹⁸ Additional studies and evolving science has since made the relationship conclusive. As of January

¹⁷ National Heart, Lung and Blood Institute. (URL http://hp2010.nhlbihin.net/cholmonth/q_a.htm)

¹⁸ FDA Backgrounder, 2003. (URL http://hp2010.nhlbihin.net/cholmonth/q_a.htm)

1, 2006, food product labels require trans fat content to be listed on the Nutrition Facts Panel if the content is more than 0.5 gram per serving.

Though high in trans fat, hydrogenated oil is a desirable product because it can be reheated without breaking down and becomes rancid less quickly than non-hydrogenated oils. Perhaps the most appealing quality of food prepared with hydrogenated oils is that these products taste good. Large corporate food makers are struggling to find substitutes, but often the food product substitutes do not meet the taste test requirements of the food makers.¹⁹

Signs of food maker success, though far and few between, are being seen. In June of 2006, Wendy's International Inc. switched to non-hydrogenated cooking oil for its French fries and breaded chicken items,²⁰ demonstrating that removing hydrogenated cooking oil from fried food preparation is achievable and a good health strategy.

Recommendation GHS-11: A list of the ingredients in food products served in a state-operated food establishment or state funded food program within an institution shall be made available upon patron request.

Implementation: Executive Directive

Rationale: Patrons susceptible to reactions from various food ingredients require this information to determine if a food product poses a health risk. Additionally, tremendous increases in the development of synthetic food additives over the past decades, coupled with approval by the Food and Drug Administration (FDA) of products that were subsequently found to cause harm to the human body, has resulted in growing concerns about the risks of consuming these additives. Examples of previously

¹⁹ Kher U., *Target: Trans Fat*, Time Magazine, 24 October, 2005

²⁰ See URL http://www.wendys.com/about_us/news/index.jsp

approved food products that have since been banned by the FDA range from artificial food coloring products to beer foam stabilizers.²¹

The list of substances that have been the subject of significant consumer concern, or are substances of consumer interest, is lengthy. Some are products of the natural environment, while others are derived from synthetic manufacturing process. Major allergens such as shellfish and tree nuts are recognized by the federal government as posing a serious health risk and possibly death to a significant segment of the population.²² Other less allergenic products, which present a risk to a smaller segment of the population, include many foods commonly found in the grocer's produce section or spice rack. FDA-approved substances that have sparked consumer interest or concern include refined sugars and hydrogenated oils (see GHS-10), artificial colorings and sweeteners, and food preservatives.

Recommendation GHS-12: Food and beverages sold at state-operated food establishments or in vending machines on state-owned property, or within private property leased by the state for working space, shall offer at least one healthy alternative for consumer selection. Healthy alternatives include nuts, seeds, and dried fruit, reduced-fat milk, soymilk, water and 50-100% fruit juice with no added sweetener. Calories, fat and saturated fat content per serving shall meet New Mexico School Nutrition Guidelines.

Implementation: Executive Directive

Rationale: Increases in obesity in the United States are identified as one of the top health concerns facing the country. Obesity is associated with diabetes, hypertension,

²¹ Center for Science in the Public Interest. Guide to Food Additives. (URL <http://www.cspinet.org/reports/chemcuisine.htm#Food%20additive>)

²² See 21 U.S.C. Section 321

heart disease, and some cancers.²³ Researchers estimate that 1 in 3 adults in the United States are obese, and a similar number are overweight.

Snack food and soft drinks are sold at the counter in food service establishments and in scores of vending machines scattered across state government. Many times there are no alternatives to standard snack food fare.

This recommendation offers a healthy snack alternative while still providing for those who wish to consume traditional, and less healthy, snack products. Similar initiatives are occurring across the country to help address the obesity problem. The city of San Antonio, as part of its Fit City Initiative, has developed Healthy Vending Guidelines that list three vending machine product categories: excluded, healthier and healthiest fare.²⁴ Kaiser Permanente, a leading integrated health care organization, serving members in nine states and Washington, D.C., recently required that 600 vending machines throughout California offer 50% health foods and beverages.²⁵

The New Mexico Public Education Department has done extensive research in the development of nutritional guidelines for schools. The fruits of their endeavors will serve the state well in specifying healthy alternatives for vending machines. Their guidelines can be found at:

http://www.ped.state.nm.us/div/sipds/health/dl/022706_docs/6%2012%205%20NMAC%20Nutrition%20Rule.pdf

Some healthy food products require refrigeration. Cold food product vending machines are readily available in the marketplace and would make a welcome addition to the standard machines placed in state government buildings.

²³ US Centers for Disease Control and Prevention, Genomics and Disease Prevention. *Obesity and Genetics*. June 2006 (URL <http://www.cdc.gov/genomics/training/perspectives/files/obesedit.htm>)

²⁴ URL <http://www.healthcollaborative.net/assets/pdf/vendingcriteria.pdf>

²⁵ Nicolaisen L. *Hospital vending goes healthy*. auburnjournal.com (URL <http://www.auburnjournal.com/articles/2005/11/10/news/lifestyle/01vending.txt>)

Recommendation GHS-13: State-operated food establishments selling to the public shall provide at least one menu item that is certified organic and, to the extent possible, offer products grown or produced in New Mexico.

Implementation: Executive Directive

Rationale: Organic foods – foods grown without pesticides, hormones, antibiotics or genetic engineering – continue to grow in demand as more people have concerns about the effects of toxins in their diet. According to the Organic Trade Association:

U.S. organic food sales have grown between 17 and 21 percent each year since 1997, to nearly triple in sales, while total U.S. food sales over this time period have grown in the range of only 2 to 4 percent a year. According to the findings, organic food sales now represent approximately 2 percent of U.S. food sales.²⁶

The growth in organic food sales is also represented in the amount of farmland certified organic by the United States Department of Agriculture. In 1992, there were 403,400 certified organic acres. By 2003, the number had increased to 1,451,601 acres.²⁷ The number of certified operations during that same period increased from 3,587 to 8,035.

This trend has not gone unnoticed by the large supermarket chains – with most now offering certified organic fare – nor by traditional university agriculture degree programs. At a Reuters Food Summit held in March, 2006, Wal-Mart Store Inc. Vice President of dry grocery announced that the chain would be doubling its organic food offerings, while in May of this year, Washington State University announced the first approved organic farming degree in the nation.²⁸

²⁶ Organic Trade Association. (URL <http://www.ota.com/organic/mt/food.html>)

²⁷ US Department of Agriculture Economic Research Service (URL <http://www.ers.usda.gov/Data/organic/data/farmland9203.xls>)

²⁸ Washington State University Press Release, May 25, 2006 (URL <http://cahenews.wsu.edu/RELEASES/2006/06035.htm>)

Driving the demand is concern and uncertainty over the effect of pesticides to human health and the belief that organic food is more nutritious than food grown with traditional farming methods.

In an Environmental Protection Agency-funded study published in February 2006, researchers found that 23 children whose diets were changed from regular to organic food for five consecutive days had an immediate drop in detectable levels of the specific metabolites for malathion and chlorpyrifos, pesticides commonly used in agricultural production. The levels remained undetectable until the children returned to a conventional diet.²⁹ In an interview, the lead researcher, Emory University's Chensheng Lu, said that scientists are still trying to determine how the pesticides affect the children, but notes that it took years to prove the health hazards of lead.³⁰

Though some studies have shown an increase in the nutritional content of organic foods over their traditional counterpart,³¹ a search of the Food and Drug Administration, Department of Agriculture, and Centers for Disease Control and Prevention studies found no specific government reports or conclusions regarding the relative nutritional content.

Innovative school programs aimed at addressing parental concerns by substituting organic products have been implemented as part of a growing national Farm-to-School movement. In 2002, the Olympia School District piloted the Organic Choices Program which added four organic salad bars and locally grown produce.³²

Offering at least one certified organic food provides the opportunity for patrons to have choice in their menu selection. The New Mexico Department of Agriculture has identified products that would fill the intent of this recommendation; including beverages,

²⁹ Lu C., et al, *Organic Diets Significantly Lower Children's Dietary Exposure to Organo-phosphorus Pesticides*. Environmental Health Perspectives Jnl. Vol. 114-2. February 2006

³⁰ Quaid L. *Parents Are Turning to Organic Over Food Fears*. Alb. Journal. November 3, 2005

³¹ Organic Trade Association (URL <http://www.ota.com/organic/benefits/nutrition.html>)

³² Flock P., et al. *A Salad Bar Featuring Organic Choices, Revitalizing the School Lunch Program*. Olympia School District. 2003 (URL http://osd.wednet.edu/media/schools/A_Salad_Bar.pdf)

nuts, jerky and baked goods. Use of these products will provide support to local growers and a healthy food alternative.

Recommendation GHS-14: State-funded institutional food programs are encouraged to include in their offering certified organic food products grown or produced in New Mexico.

Implementation: Executive Directive

Rationale: The rationale for this recommendation is much the same as Recommendation GHS-13.

The Task Force is aware and does note that most food budgets for state programs must conform to legislative appropriations for the agency. According to the Organic Trade Association, organic products typically cost anywhere from 20 percent more for dairy products to 200-300 percent more for meat products, which could put a strain on agency spending. However, the New Mexico Organic Commodity Commission notes that in-season organic fruits and vegetables are very nearly comparable in price with traditionally grown produce.

Recommendation GHS-15: The General Services Department Risk Management Division shall include an employee exercise motivation component as part of the State's Medical Plans, and negotiate contracts for discounted employee rates at area fitness centers.

Implementation: General Services Department Risk Management Division

Rationale: Providing exercise motivation tools will enhance the overall health of state employees. The objective of the recommendation is to: 1) Encourage employees to

adopt an exercise regimen; 2) Help the employees develop fitness goals for their regimen; and, 3) Offer motivational tools that assist employees in overcoming the barriers that often derail successful exercise plans.

There is no disputing the positive effects of exercise or the health problems associated with obesity and lack of exercise.

From the National Institute on Aging³³:

Staying physically active and exercising regularly can improve mood and relieve depression, and prevent or delay some types of cancer, heart disease, and diabetes.... Making exercise a regular part of your daily routine will have a positive impact on your quality of life as you get older.

From the National Cancer Institute³⁴:

Based on solid evidence, strenuous exercising more than 4 hours per week is associated with reduced breast cancer risk.

From the National Institute of Arthritis and Musculoskeletal and Skin diseases³⁵:

Studies have shown that exercise helps people with arthritis in many ways. Exercise reduces joint pain and stiffness and increases flexibility, muscle strength, cardiac fitness, and endurance.

From the National Institute of Diabetes and Digestive and Kidney Diseases³⁶:

Diabetic women who spent at least four hours per week performing moderate or vigorous exercise had an approximately 40 percent lower risk for cardiovascular disease than those who exercised less.

³³ DHHS. National Institutes of Health, National Institute on Aging (URL <http://nihseniorhealth.gov/exercise/benefits/exercise/01.html>)

³⁴ DHHS. National Institutes of Health, National Cancer Institute (URL <http://www.cancer.gov/cancertopics/pdq/prevention/breast/HealthProfessional>)

³⁵ DHHS. National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (URL <http://www.niams.nih.gov/hi/topics/arthritis/arthexfs.htm#3>)

³⁶ DHHS. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases (Archived) (URL <http://www.niddk.nih.gov/federal/dwg/2002/10women.pdf>)

And from the Centers for Disease Control and Prevention comes perhaps the most comprehensive and compelling passage³⁷:

Epidemiologic research has demonstrated protective effects of varying strength between physical activity and risk for several chronic diseases, including coronary heart disease (CHD), hypertension, non-insulin-dependent diabetes mellitus, osteoporosis, colon cancer, and anxiety and depression.

Other epidemiologic studies have shown that low levels of habitual physical activity and low levels of physical fitness are associated with markedly increased all-cause mortality rates. A midlife increase in physical activity is associated with a decreased risk of mortality. It has been estimated that as many as 250,000 deaths per year in the United States, approximately 12% of the total, are attributable to a lack of regular physical activity.

The Task Force believes that, as one of the largest employers in New Mexico, employee discount rates at local exercise facilities will be easily secured. It is important that employees outside of Santa Fe and Albuquerque not be overlooked in establishing group discount agreements.

Recommendation GHS-16: A State Health Center pilot program shall be initiated.

Implementation: State Personnel Office, Employee Assistance Program, Department of Health and General Services Department

Rationale: A State Health Center is a small medical unit in close proximity to a building or complex of buildings with a high density of state employees. The center's mission will be dedicated to informative sessions and support groups for an array of physical and behavioral maladies, as well as to provide medical assistance for minor illnesses. The latter will lower incidences of employees having to go to their primary care

³⁷ Centers for Disease Control and Prevention. *Physical Activity and Public Health - - A Recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine*. 1995 (URL <http://wonder.cdc.gov/wonder/prevguid/p0000391/p0000391.asp>)

physician, often requiring a significant amount of sick leave time, for problems that can be addressed quickly, without an appointment, by a nurse practitioner, a physician's assistant or part-time doctor, perhaps one who is semi-retired.

Recommendation GHS-17: A stress reduction program, based on the State Police Peer/Police Officer Support Team Program (POST) and Partners for Police Officers (PPO) Program, shall be implemented.

Implementation: State Personnel Department, Employee Assistance Program, General Services Department and Department of Public Safety.

Rationale: State employees encounter stressful situations in their private and professional lives – divorce, financial hardships, the death of a family member or co-worker – that negatively impact their abilities in the work place. An identified best practice addressing this issue is the State Police Peer/Police Officer Support Team Program (POST) and Partners for Police Officers Program (PPO), which provides support to employees and employees' family members. It is the belief of the Task Force that the program could easily be adapted and expanded by other state agencies within the executive branch.

Originally created in 1999 to assist police officers coping with the tragedies they encounter as part of their professional duties, the programs were expanded within the department to non-commissioned employees dealing with similar stresses. The programs have since evolved to address not only work-related problems, but also personal life circumstances that are affecting their job performance.

The program is administered using tools developed through Critical Incident Stress Management. These include interventions (either by a group or one-on-one) and debriefings. The programs are voluntary and the proceedings are kept confidential. Individuals trusted and respected by the employees receive training from a full-time staff psychologist and make themselves available to provide assistance. If warranted, the

distraught employee is referred to a mental health professional for major intervention. The programs are award-winning and successful. Captain Jimmy Salmon, commander of the POST team, stressed the importance of follow-up in program success.

Construction and Renovations

The state of New Mexico instituted a best practice for state building construction when Governor Richardson signed Executive Order 2006-001, *State of New Mexico Energy Efficient Green Building Standards for State Buildings*. Through EO-06-001, the Governor ordered that all new construction and major renovations of buildings over 15,000 square feet achieve, at a minimum, a Silver rating in accordance with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Rating System. The executive order also requires that various classes of public buildings meet strict performance standards related to energy consumption for that building type; and, all other new construction, renovations, repairs, and replacements of state building employ cost-effective, energy-efficient, green building practices, to the maximum extent possible. Complying with performance standards generates a LEED rating that categorically defines a project as: 1) Certified (26 – 32 points); or, 2) Silver (33 – 38 points); or, 3) Gold (39 – 51 points); or, the highest certification possible, 4) Platinum (52 – 69 points). Points are apportioned into six overarching project areas: Sustainable Sites; Water Efficiency; Energy and Atmosphere; Materials and Resources; Indoor Environmental Quality; and Innovation and Design Process.³⁸

The executive order and the LEED rating system, both of which are endorsed by the Task Force, served the Construction and Renovation Work Group as a foundation for many of the recommendations. In addition, the work group explored precautionary measures related to building renovations, the shielding of building occupants from electromagnetic fields, designing buildings with pest infestation deterrence measures, development of a centralized state authority for leased building maintenance specifications, and the use of certain low-risk materials during the construction and renovation process. The Task Force recommendations are as follows:

³⁸ US Green Building Council (2005), LEED-NC Green Building Rating System for New Construction & Major Renovations, Version 2.2, 8-9

Recommendation CR-18: When obtaining a LEED rating for new buildings and renovations, significant emphasis shall be placed on indoor air quality measures identified in the rating as Indoor Environmental Quality Credits 1 through 5, and increases in interior daylight as identified in Credit 8.

Implementation: General Services Department Building Services Division

Rationale: While 69 points are possible within the LEED rating system, the Silver Category for certification requires only 33 points, which allows a variety of options to choose when obtaining the points. The Task Force notes that the United States Environmental Protection Agency and its Science Advisory Board have ranked indoor air pollution among the top five environmental risks to public health,³⁹ and as such urges that implementation of Executive Order 2006-001 emphasize credits related to indoor air quality and daylighting. The referenced credits address the following (each being worth one point of the possible 69):

Credit 1: Outdoor Air Delivery Monitoring

Credit 2: Increased Ventilation

Credit 3.1: Construction IAQ Management Plan (during construction)

Credit 3.2: Construction IAQ Management Plan (before occupancy)

Credit 4.1: Low-Emitting Materials: Adhesives and Sealants

Credit 4.2: Low-Emitting Materials: Paints and Coatings

Credit 4.3: Low-Emitting Materials: Carpet Systems

Credit 4.4: Low Emitting Materials: Composite Wood and Agrifiber Products

Credit 5: Indoor Chemical & Pollutant Source Control

Credit 8.1: Daylight & Views: Daylight 75% of Spaces

³⁹ <http://www.epa.gov/iaq/pubs/pnier.pdf>

Recommendation CR-19: Interior building materials used in new construction or renovations of habitable space shall comply with The Collaborative for High Performance Schools, Section 01350, Special Environmental Requirements. (Duplicate of Recommendation IAQ-8):

Implementation: Executive Directive.

Rationale: Exposure to indoor air pollutants has increased due to several factors, including the use of synthetic building materials and furnishings such as finishes, office furniture and carpets. Standard Section 01350, developed by a collaborative including the California Department of Health Services and the California Air Resources Board and private companies, provides selection guidelines and emission-testing protocols to distinguish low-emitting materials. Included in the standard is a listing of low-emitting materials that can be examined for the development of state purchasing specifications.

For an expanded discussion, see the rationale for Recommendation IAQ-8.

Recommendation CR-20: The owners of private office space leased by the state shall certify that they have performed the heating, ventilation, and air conditioning maintenance as specified by Building Services Division minimum requirements (Duplicate of Recommendation IAQ- 6).

Implementation: General Services Department Building Services Division and State Land Office.

Rationale: State agency managers located within leased office space are currently responsible for ensuring adequate maintenance to the heating, ventilation and air conditioning system. This recommendation will place the responsibility on the building owner and ensure furnace filters, cooling pads and general maintenance are to the same standards as required by the Building Services Division.

Recommendation CR-21: New building or renovation design related to the placement of devices generating electromagnetic fields (EMF) shall incorporate measures reducing the occupant's exposure to the EMF source. Such measures shall include increasing the distance to the source, changing layout of office power supply lines and minimizing EMF exposure times. Workers in close proximity to an EMF source shall be advised of the source location. The state shall also preferentially purchase computers and other electrical equipment that emit lower electromagnetic fields, and keep abreast of developing health studies related to the relatively new and rapidly expanding use of wireless systems.

Implementation: General Services Department Building Services Division and Property Control Division

Rationale: Electromagnetic fields (EMF) in the work place result from the flow of current through a wire or electrical device, increasing or decreasing depending on the size of the current and the design of the device, and are typically in the extremely low-frequency range of 60 hertz (Hz) in the United States. While the EMF can be relatively high in the immediate vicinity of the wire or device, the field strength drops quickly over a small distance.⁴⁰ Available scientific evidence related to EMF effects on human health is conflicting. While the Environmental Protection Agency has not issued an official statement on EMF exposure and health risk, it does note that other credible organizations have evaluated information about exposure and effects, with the organizations concluding:

1. That extremely-low frequency EMFs are possibly carcinogenic to humans based on consistent statistical associations of high level residential magnetic fields with a doubling of risk of childhood leukemia.....No consistent evidence was found

⁴⁰ DHHS. National Institutes of Health. National Institute of Health Sciences, Electric and Magnetic Field and Public Information and Dissemination Program. See URL <http://www.niehs.nih.gov/emfrapid/booklet/basics.htm>

- that residential or occupational exposures of adults to extremely-low frequency magnetic fields increase risk for any kind of cancer (International Agency for Research on Cancer, a World Health Organization agency); and,
2. That EMFs are possible carcinogens for children exposed to EMFs at home based on epidemiological studies of residential exposure and childhood leukemia (National Institute of Environmental Health Sciences/National Institutes of Health Working Group).⁴¹

Between 1992 and 1998 the National Institute of Environmental Health Sciences (NIOSH) and the Department of Energy coordinated the implementation of the Electric and Magnetic Fields (EMF) Research and Public Information Dissemination (RAPID) Program. The program was an effort to evaluate developing technologies and research the effects on biological systems of exposure to 60 Hz electric and magnetic fields produced by the generation, transmission and use of electric energy, and to communicate these results to the public sector. The program noted in 1997:

*The EMF RAPID Program had the central goal of determining if electric and magnetic fields associated with the generation, transmission, and use of electrical energy pose a risk to human health. The fact that twenty years of research have not answered that question is clear evidence that health effects of EMF are not obvious and that risk relationships, if risk is identified, are not simple. Because epidemiologic studies had raised concerns regarding the connection between certain serious human health effects and exposure to electric and magnetic fields, the program adopted the hypothesis that exposure to electric or magnetic fields under some conditions may lead to unacceptable risk to human health.*⁴²

The RAPID Program was unable to arrive at a definitive conclusion regarding EMFs in the workplace. However, NIOSH does suggest that while research continues, concerned workers and employers reduce EMF exposures with the following measures:

- Inform workers and employers about the possible hazards of magnetic fields.

⁴¹ US Environmental Protection Agency. Radiation Protection. Becoming Aware of Radiation Sources EMF. March 2006. See URL <http://www.epa.gov/radiation/sources/emf.htm>

⁴² DHHS. National Institutes of Health. National Institute of Health Sciences, Electric and Magnetic Field and Public Information and Dissemination Program. EMF RAPID. 1997

- Increase the worker's distance from the EMF source. Since magnetic fields often drop off dramatically within about 3 feet of the source, workers can stand back from electrical equipment, and workstations can be moved out of the 3-ft range of stronger EMF sources.
- Use low-EMF designs wherever possible (e.g., for the layout of office power supplies).
- Reduce EMF exposure times. No action should be taken to reduce EMF exposure if it increases the risk of a known safety or health hazard such as electrocution.⁴³

Recommendation CR-22: The United States Environmental Protection Agency Tools for Schools Backgrounder and Renovation and Repair Checklist shall be used for renovation and major repair jobs in state owned or leased buildings.

Implementation: GSD Building Services Division and Property Control Division, State Land Office, State Fair Commission and Department of Transportation.

Rationale: Renovations and repairs can release dust, toxic materials, mold and off-gassing products into the workplace. Such projects can also interfere with ventilation and emergency response plans (e.g., blocking of fire exits). Staff project managers reviewing the checklists with those performing the work will identify problems and provide possible solutions.

The EPA Renovation and Repair Checklist⁴⁴ provides activities related to communication, planning, site preparation, asbestos management plan requirements, exposure of microbial growth, off-gassing materials, painting, flooring, roofing, project

⁴³ DHHS. National Institutes of Health. National Institute of Health Sciences Fact Sheet (pub. 96-129). *EMFs In The Workplace*. (See URL <http://www.cdc.gov/niosh/emf2.html>)

⁴⁴ EPA Background Information for Renovations and Repair. (See URL <http://www.epa.gov/iaq/schools/tfs/checklists/renrepairchk1stbkgd.pdf>)

commissioning and contract administration. The activities are consolidated in an easy to use checklist.⁴⁵

Recommendation CR-23: Carpet installation shall be minimized and all new carpets installed in state buildings shall be low volatile organic compound emitting carpet tiles.

Implementation: Executive Directive

Rationale: Carpets are a sink for dirt, dust, food particles and other potential triggers for asthma attacks and sensitivity responses. Carpets subjected to moisture through spills or leaks become breeding grounds for mold and mildew. Use of modular carpet tiles will allow an inexpensive and relatively quick replacement of areas of the carpet exposed to moisture or other damage.

Recommendation CR-24: Operable windows shall be specified for new building construction.

Implementation: General Services Department Building Services Division, State Land Office, State Fair Commission and Department Of Transportation.

Rationale: The ability to open windows is an effective way to introduce outside air into a building and improve indoor air quality. Being able to open windows is especially important to provide fresh air for chemically sensitive individuals. However, opening operable windows should be coordinated with the overall functioning of the HVAC

⁴⁵ EPA Renovation and Repairs Checklist. (See URL <http://www.epa.gov/iaq/schools/tfs/checklists/renrepairchk1st.pdf>)

system and only be opened for short periods when refrigerated cooling systems are in use.

Recommendation CR-25: Position drop-offs, loading docks, helicopter pads, and other vehicular access points to eliminate or minimize exhaust fumes from entering building directly or being drawn into the HVAC system. (Contains Components of Recommendation IAQ-5)

Implementation: General Services Department Building Services Division, State Land Office, State Fair Commission and Department of Transportation.

Rationale: See rationale for Recommendation IAQ-5 for discussion on traffic pollution triggers and American Society of Heating, Refrigeration and Air Conditioning outside air intake standards.

Integrated Pest Management

Many definitions of Integrated Pest Management (IPM) have been put forth by various governmental and private entities. The United States has codified the definition in the Food Quality Protection Act of 1996 as the following:

*Integrated Pest Management is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.*⁴⁶

Minimizing state employee and visitor exposure to chemicals or toxins that may trigger asthmatic or chemical sensitivity reactions, or whose long-term exposure effects are uncertain, is a primary component of the Task Force mission. As such, the underlying theme of the Task Force's pesticide application recommendations is using non-chemical strategies whenever possible, and in instances where state government must resort to chemical usage, to employ least toxic chemicals in the minimum amounts needed at the most advantageous time necessary to eliminate the pest.

Institutionalization of a precautionary IPM culture will require detailed processes, procedures, and adequate training of employees.

Employee training is largely directed at those responsible for pest control, but also includes a basic understanding by all employees of the health hazards of pesticides, the rationale for using IPM, the need for employee participation in reducing food and water sources that attract pests, the importance of allowing only licensed staff to apply pesticides, and the need for employees to report pest sightings.

Training of pest control staff includes several facets: 1) The ability to identify the pests so strategies specific to that species are used, 2) using liquid and aerosol insecticides indoors only in the most extreme circumstances, and, 3) avoiding the use of poisonous

⁴⁶ US Food Quality Protection Act of 1996, Public Law [104-170](#), Title III, § [303](#)

baits by using preventive measures and traps for rodent control. An extreme circumstance is defined as an event in which there is imminent danger to human health or the environment that cannot be managed in a non-chemical manner. An example of an extreme circumstance is a swarming invasion of honeybees, bumblebees, yellow jackets, paper wasps or other stinging insects into a building.

Recommendation IPM-26: The Department of Agriculture, Environment Department and Health Department shall collaboratively establish a single-point Integrated Pest Management resource center. The resource center will provide documents, databases, and links to the people, organizations, and programs that are involved in IPM, and shall provide IPM training as requested by the state, local governments, school districts and institutions of higher learning. A state IPM coordinator shall be designated to head the resource center and provide IPM training.

Implementation: Departments of Agriculture, Environment and Health

Rationale: Collectively, the missions of these three departments have an overarching responsibility related to pesticide application and the protection of public health and the environment. Their complementary missions in developing a resource center are briefly described below:

- The Department of Agriculture is an agriculture-consumer service and regulatory agency responsible for registering pesticides distributed in the state and regulating most persons who apply pesticides. They certify and license commercial pest control applicators (such as exterminators, tree sprayers and aerial applicators) who apply any kind of pesticide for hire. They also certify and license persons who apply restricted-use pesticides such as public agency employees, farmers, ranchers and nursery staff.

- The Environment Department is a regulatory agency charged with protecting the state's ground water, surface water, drinking water, and air quality. Additionally, the agency has the responsibility of enforcing Occupational Health and Safety Regulations within New Mexico.
- The Department of Health has a myriad of initiatives and programs that attempt to prevent health problems from occurring. One such initiative is identifying the relationship between environmental causes and asthma triggers. The department will also provide toxicology resources to the center. This will assist in developing a better understanding of morbidity and mortality causality in New Mexico.

The IPM Center, designed with equally weighted input from the three departments, will serve as a virtual resource providing IPM outreach to state agencies and managers of office buildings leased by the state, local governments, public schools and institutes of higher learning. Information collected and provided by the Center will assist the users in developing best practices, provide a one-stop repository for program operation, and ensure IPM training strategies that provide alternatives to traditional pesticide application in the workplace and state buildings. An IPM coordinator will head the resource center and provide IPM trainings.

Recommendation IPM-27: Pest prevention protocol shall be a required component for approval of a new building design and renovations.

Implementation: GSD Building Services Division and Property Control Division, State Land Office, State Fair Commission and Department Of Transportation.

Rationale: Architects and engineers may not be familiar with pest behavior and the pathways usually associated with their infestations. Review of plans by an individual with experience in structural, maintenance, and procedural modifications that decrease pest incidences will lessen the need for chemical applications or other pest control

measures once the building is occupied. Minimization or elimination of potential pest pathways will result in fewer allergens in the workplace and public buildings, and the prevention of damage to facilities. The result will be a healthier indoor environment and lower maintenance costs. Agencies responsible for implementation may do so during the Request for Proposal (RFP) process by including a specification delineating this recommendation. The responsible agencies may also attribute points (used for scoring a proposal) within the lease procurement process for such a review.

For guidance on implementing this recommendation, see the California Department of Pesticide Regulation's "Pest Prevention: Maintenance Practices and Facility Design," at www.cdpr.ca.gov/cfdocs/apps/schoolipm/managing_pests/71_pest_prevention.cfm?crumbs_list=1.34.

To help in successful implementation of this recommendation, it is also suggested that Continuing Education Units (CEUs) be made available from the American Institute of Architects for pest design classes.

Recommendation IPM-28: Exterior landscaping shall avoid plants that commonly provoke allergies. Landscaping plans shall promote indigenous plant materials that are hardy and naturally pest and disease resistant. Interior landscaping is discouraged.

Implementation: General Services Department Building Services Division, State Land Office, State Fair Commission and Department Of Transportation.

Rationale: Indigenous pest and disease resistant plants require little if any fertilizer or pesticide application, and as a side-benefit, need minimal watering once established. In addition to removing potential triggers related to asthma attacks, allergic reactions or chemical sensitivity response, there is a reduction in potential non-point source runoff of chemicals into streets and arroyos, with such runoff eventually finding its way into the streams and rivers of the state.

The City of Albuquerque has institutionalized through ordinance a best practice aimed at minimizing allergens adversely impacting human health. The Albuquerque Pollen Control Ordinance serves as a guide in establishing three classes of regulated trees as follows: 1) Regulated general, species, cultivars or varieties for which growing, sale, importation or planting is prohibited; 2) general and species of wind pollinated trees that may be planted if they are identified as high pollen/high allergen through individual labeling; and, 3) species of non-flowering and non-pollen producing trees that may be sold and planted without any restrictions.⁴⁷ Included within the categories are specific genera or species listings that will serve well in deciding which trees to plant on state properties.

Recommendation IPM-29: A notification process for pesticide/herbicide applications in and around state government buildings shall be developed and implemented.

Implementation: General Services Department State Purchasing Division, and Property Control Division lease agreement language.

Rationale: A notification process will allow individuals to take precautionary measures. Suggested notification shall include, but is not limited to, conspicuously posting a placard with planned date of pesticide application, the pesticide (brand name, active ingredient, EPA Registration Number), location where pesticide will be applied, the target pest, and a contact phone number for additional information. State Purchase Contract Number 50-000-00-00103 is used for state-sponsored pesticide application procurement. Through amendment, the contract will serve as a vehicle to specify this requirement to pesticide/herbicide applicators. Similarly, the requirement, when added to office space lease agreements, will ensure that those responsible for private building management will post notices of pesticide/herbicide application.

⁴⁷ City of Albuquerque Pollen Control Ordinance, Article 12, Section 9-12-5 Regulated Trees (URL <http://www.cabq.gov/airquality/pdf/pollenord.pdf>)

Recommendation IPM-30: Investigate methods for the expansion of the Department of Transportation Integrated Vegetation Management Program (IVM). The IVM program shall increase the use of non-chemical methods of weed and pest control, and when pesticides are used, the department shall develop and implement measures aimed at increasing public notification of the pesticide application.

Implementation: Department of Transportation State Maintenance Bureau.

Rationale: The department currently notifies the public of herbicide application through their agency web site.⁴⁸ This informative web site provides the road segment (by mile-post number) that is to be sprayed, the date of the spraying, the name of the herbicide that will be sprayed, and the vegetation identified for the application. The Task Force recommends expansion of the notification process so individuals without computer access and/or traveling through the state will be aware of the application, and thus allow them to take the precautionary measure of sealing their vehicle's windows and closing the air intakes when traveling on the treated road segment, or taking another route.

Recommendation IPM-31: Only licensed individuals shall make pesticide applications on state property. Disinfectant applications are exempted from this recommendation.

Implementation: Executive Directive

Rationale: Pesticides should only be applied by individuals who have successfully completed the applicable training course(s) and have obtained a New Mexico

⁴⁸ See URL <http://nmshtd.state.nm.us/road-info/default.asp?strApp=vegtmgmt>

Department of Agriculture applicator's license. Application of pesticides by non-licensed state employees may unintentionally cause harm to other occupants and visitors

Recommendation IPM-32: All state agencies shall adopt into policy the General Services Department Building Service Division's soon-to-be-released Integrated Pest Management Plan.

Implementation: Executive Directive.

Rationale: This evolving plan serves as a best practice within state government. It contains the most up-to-date information and procedures regarding Integrated Pest Management Program Operation.

Recommendation IPM-33: The Environment Department shall incorporate an Integrated Pest Management training module into their food service and food processor training.

Implementation: Environment Department Environmental Health Division.

Rationale: IPM training will minimize pesticide use in an environment where food products are prepared and served. This will lower the risk of pesticide exposure to employees and the general public.

Recommendation IPM-34: The Attorney General's Consumer Affairs Division shall monitor pesticide advertising, and establish criteria and pursue corrective action in response to false and misleading advertising regarding services and products.

Implementation: Office of the New Mexico Attorney General

Rationale: Testing of pesticides for Environmental Protection Agency (EPA) registration is the responsibility of the applicant and is based in part on toxicology risk assessments from animal exposure test results. The test results are then extrapolated to humans, and, after several program modeling adjustments – including those related to interspecies, intraspecies, and childhood uncertainty factors⁴⁹ – product licensing may occur if the final assessment determines the risk to be acceptable. There is also latitude in registration approval based on the economic, social, and environmental costs and benefits of the use of any pesticide. The latitude was described by the New York Attorney General’s Office as follows:

When the EPA registers (permits to be sold) a pesticide, the agency does not decide that the product poses no environmental or health threats. Rather, the EPA is required to register a pesticide if it determines that the product will not generally cause, according to federal pesticide laws, "unreasonable adverse effects" to public health or the environment. The determination of such "unreasonable" adverse effects requires, by law, consideration of economic, social and environmental benefits as well as costs. Thus, the registration decision is based on balancing the benefits against the risks.⁵⁰

The EPA may also allow the application of a pesticide for an unregistered use under emergency or crisis exemption provisions. Because all pesticides are hazardous to some degree, federal law prohibits manufacturers from labeling their products as safe even when accompanied by qualifying phrases such as “when used as directed.” Examples of statements or representations in the labeling which constitute misbranding include claims as to the safety of the pesticide or its ingredients, including statements such as “safe,” “nonpoisonous,” “noninjurious,” “harmless” or “nontoxic to humans and pets.”⁵¹

⁴⁹ Pesticide Action Network Pesticide Database. Limitations of the Toxicity Data. 2006 (See URL http://www.pesticideinfo.org/Docs/ref_toxicity1.html#Interspecies)

⁵⁰ New York State Attorney General’s Office. Environmental Protection Bureau. *ATTORNEY GENERAL REPORTS: Greenmarketing In The Yellow Pages: Deceptive Advertising Of Pest Control Services*. 1998, revised 1999

⁵¹ 40 C.F.R. 156.10 (a)(5) (See URL http://a257.g.akamaitech.net/7/257/2422/12feb20041500/edocket.access.gpo.gov/cfr_2004/julqtr/pdf/40cfr156.10.pdf)

The New York Attorney General's Office reports that noncompliance with advertising requirements has resulted in legal action against manufacturers, retailers and applicators which have published advertisements found to contain deceptive claims about the safety and environmental benefits of pesticides.⁵² Settlements have included \$100,000 in costs and restrictions with ChemLawn Services Corporation, and Assurances of Discontinuance with LESCO, DowElanco, Chevron Chemical Company and Monsanto, Inc.

Procurement of pesticide application services is not only made by state government, but also by private individuals leasing office space for state operations. This recommendation will help ensure that those procuring the service will not be subject to misleading or false advertising.

⁵² New York State Attorney General's Office.

Conclusion

In essence, the precautionary approach states that when an activity represents potential harm to human health or the environment, then precautionary measures should be taken to minimize or mitigate their effects. This principle establishes that a lack of information does not justify the absence of management measures. The goal of these risk management measures is scientifically sound, cost-effective integrated actions that reduce risks while taking into account social, cultural, ethical, and legal considerations.

The guiding definition of the Task Force is as follows:

“In order to protect human health and the environment, the precautionary approach shall be widely applied by New Mexico State Government according to its capabilities. Where there are threats of serious or irreversible damage, the lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent deterioration of human health or environmental degradation.”

The Precautionary Principle Task Force believes that the recommendations adopted within this report are pragmatic, beneficial and attainable. The Task Force recommends the development of a strategic plan for the implementation of these recommendations. The first step should include outreach to other state agencies to further inform and respectively evaluate the potential for implementation.

It is the hope of the Precautionary Principle Task Force that through example the Departments of Health and Environment will continue to serve as leaders for protecting human health and the environment. The Task Force hereby concludes its recommendations and applauds both Cabinet Secretaries for their collaborative effort to better state government.